



National Quail Symposium Proceedings

Volume 3

Article 30

1993

Appendix B: Abstracts

Follow this and additional works at: <http://trace.tennessee.edu/nqsp>

Recommended Citation

(1993) "Appendix B: Abstracts," *National Quail Symposium Proceedings*: Vol. 3 , Article 30.
Available at: <http://trace.tennessee.edu/nqsp/vol3/iss1/30>

This Appendix is brought to you for free and open access by Trace: Tennessee Research and Creative Exchange. It has been accepted for inclusion in National Quail Symposium Proceedings by an authorized editor of Trace: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

APPENDIX B. ABSTRACTS FOR POSTER PAPERS AND UNPUBLISHED PRESENTATIONS

RESPONSE OF NORTHERN BOBWHITE TO HERBICIDE TREATMENT OF SOUTH TEXAS MIXED-BRUSH COMMUNITIES

WILLIAM P. KUVLESKY JR.,¹ Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX 77843

BEN H. KOERTH,² Texas Agricultural Experiment Station, La Copita Research Area, Route 1, Box 203, Alice, TX 78332

NOVA J. SILVY, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX 77843

WENDELL G. SWANK,³ Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX 77843

Abstract: We evaluated the response of northern bobwhite (*Colinus virginianus*) to herbicide treatment of mixed-brush communities in south Texas from summer 1987 to summer 1988. Our results indicated that bobwhite initially avoided treated habitats for 4–5 months after herbicide application in May. However, bobwhite began to use treated habitats the following fall. Timely spring precipitation ensured adequate soil moisture for herbaceous plant growth in treated areas. Establishment of this critical habitat component probably contributed to bobwhite use of treated areas within 6 months posttreatment. The combination of timely rainfall with brush defoliation resulted in fall habitat conditions conducive to bobwhite.

¹U.S. Fish and Wildlife Service, Buenos Aires National Wildlife Refuge, PO Box 109, Sasabe, AZ 85663

²School of Forestry, PO BOX 6109, Stephen F. Austin State University, Nacogdoches, TX 75962.

³2326 South Quail Road, Cottonwood, AZ 86326.

BREEDING ECOLOGY OF NORTHERN BOBWHITE IN EASTCENTRAL KANSAS

J. SCOTT TAYLOR, Department of Wildlife Ecology, 226 Russell Laboratories, University of Wisconsin-Madison, Madison, WI 53706

DONALD H. RUSCH, Department of Wildlife Ecology, 226 Russell Laboratories, University of Wisconsin-Madison, Madison, WI 53706

KEVIN E. CHURCH, Kansas Department of Wildlife and Parks, PO BOX 1525, Emporia, KS 66801

Abstract: An investigation of northern bobwhite breeding ecology in rangeland vs. cropland ecosystems in eastcentral Kansas is currently underway (1991–93). The rangeland study area consists of >80% seasonally-grazed native grass pasture; the cropland study area consists of a variety of cover types, including row- and drilled-crops, warm- and cool-season grasses reestablished under Conservation Reserve Program guidelines, and seasonally-grazed native grass pasture. Study areas are approximately 11 km apart. Bobwhite of both sexes are being livetrapped and radio-tagged. Survival, habitat use, and movements of marked birds are being ascertained from daily radiolocations during mid-March through mid-August. Reproducing bobwhite are providing nest success, fecundity, and nesting habitat preference information. Brood survival, movements, and habitat use are also being monitored. Results of this study will allow development of credible bobwhite management strategies that are tailored to landscape characteristics in Kansas.

AN INTERACTIVE COMPUTER PROGRAM FOR DISPLAY, MANIPULATION, AND ANALYSIS OF HABITAT DATA

BRYAN RICHARDS, Cooperative Wildlife Research Laboratory, Southern Illinois University, Carbondale, IL 62901

JOHN L. ROSEBERRY, Cooperative Wildlife Research Laboratory, Southern Illinois University, Carbondale, IL 62901

Abstract: An interactive graphic display program was developed that mimics functions of Geographical Information System (GIS) programs, does not require GIS software, and runs on smaller personal computers. The program utilizes digital GIS output from remote-sensing sources (e.g., Landsat TM) and allows users to display land use and simulate habitat changes in selected areas. Two preliminary models that calculate habitat suitability indices for northern bobwhite are linked to the main display program. One model accepts user inputs regarding habitat quality, the other model does not. The system is potentially useful for bobwhite land management planning and for predicting responses to habitat alteration.

LONG-TERM TRENDS OF NORTHERN BOBWHITE POPULATIONS IN THE SOUTHEASTERN U.S.: THE ROLE OF ABIOTIC FACTORS

BRUCE D. LEOPOLD, Department of Wildlife and Fisheries, PO Drawer LW, Mississippi State University, Mississippi State, MS 39762

LEONARD A. BRENNAN, Department of Wildlife and Fisheries, PO Drawer LW, Mississippi State University, Mississippi State, MS 39762

WALTER ROSENE, 127 Oak Circle, Gadsden, AL 35901

GEORGE A. HURST, Department of Wildlife and Fisheries, PO Drawer LW, Mississippi State University, Mississippi State, MS 39762

Abstract: We assessed the potential influence of precipitation variation and drought-severity on long-term trends of northern bobwhite population indexes using data derived from the Christmas Bird Count (1961–89) in the southeastern U.S., and harvest data (number of bobwhite bagged per unit effort) from Groton Plantation (1957–89) and Oakland Hunting Club (1927–87) in South Carolina. We calculated long-term yearly drought-severity indices to simultaneously scale precipitation, average temperature, water holding capacities of soil, and evapo-transpiration, and used these data as independent variables in regression analyses of long-term bobwhite population indices. Drought-severity indices were correlated ($P < 0.5$) with long-term bobwhite population trends and explained approximately 50% of the year-to-year variation in population changes. Variation in population indices not explained by drought-severity indexes is apparently the result of biotic factors associated with changes in land use.

STATUS OF MOUNTAIN QUAIL IN THE INTERMOUNTAIN WEST

TOM HEMKER, Idaho Department of Fish and Game, 600 South Walnut, Box 25, Boise, ID 83707

ALAN SANDS, USDI Bureau of Land Management, 3948 Development Avenue, Boise, ID 83705

ED ROBERTSON, Chukar Foundation, Boise, ID 83706

Abstract: Mountain quail (*Oreortyx pictus*) populations inhabiting the inland areas of Washington, Oregon, Idaho, and Nevada have declined dramatically during the last 20–30 years. In Idaho, distribution of this bird has declined by over 90% and the season closed on the once common species in 1984 after harvest dropped by about 96% from the 1950's to the 1970's. As a result, this species has received increased attention from sportsmen and management agencies and is currently listed as a "Sensitive Species" by the U.S. Forest Service and Bureau of Land Management. Existing data suggest that these declines in mountain quail populations are related to losses of riparian habitat quantity and quality.

EFFECT OF RED IMPORTED FIRE ANT CONTROL ON NORTHERN BOBWHITE

CRAIG R. ALLEN, Department of Range and Wildlife Management, Texas Tech University, Lubbock, TX 79409

R. SCOTT LUTZ, Department of Range and Wildlife Management, Texas Tech University, Lubbock, TX 79409

STEPHEN DEMARAIS, Department of Range and Wildlife Management, Texas Tech University, Lubbock, TX 79409

Abstract: The impact of the red imported fire ant (RIFA) on northern bobwhite has been a matter of controversy for more than half a century. The recent advent and spread of high-density, multiple-queen fire ant mounds has increased interest in RIFA-bobwhite interactions. Texas Tech University, and cooperators including the U.S. Department of Agriculture, the Texas Department of Agriculture, American Cyanamid, Quail Unlimited, and the Houston Livestock Show and Rodeo Association are investigating the impact of RIFA on bobwhite and other vertebrates. Ten approximately 2 X 2-ha study sites in the coastal bend of Texas were selected and paired based on similarity of their rangeland habitats. One randomly chosen site from each pair was treated with AMDRO fire ant bait (1.67 kg/ha) during April and October 1991 to reduce RIFA numbers. Bobwhite (as well as white-tailed deer, small mammal, and herpetological) populations are being monitored during 1991 and 1992 to assess the impact of RIFA control. Bobwhite densities were estimated via line-transects. An average 81% reduction in RIFA numbers was achieved on treated sites 8 weeks after spring 1991 treatment with AMDRO. Bobwhite densities averaged 4/ha on treated sites and 1.3/ha on untreated sites, but were not different ($P > 0.25$). RIFA were again treated in spring 1992, and bobwhite populations were intensively monitored in the fall of 1992.

CURRENT RESEARCH ON MOUNTAIN QUAIL IN IDAHO

PATRICIA E. HEEKIN, Department of Fish and Wildlife Resources, University of Idaho, Moscow, ID 83843

KERRY P. REESE, Department of Fish and Wildlife Resources, University of Idaho, Moscow, ID 83843

PETE ZAGER, Idaho Department of Fish and Game, 1540 Warner Avenue, Lewiston, ID 83501

Abstract: Mountain quail numbers in Idaho have been declining over the past several decades. As a result, the species has been classified as a "Sensitive Species" by the Idaho Department of Fish and Game, U.S. Bureau of Land Management, and Region 4 of the U.S. Forest Service. Consequently, management agencies need information on the ecology of mountain quail in Idaho to develop management strategies that will prevent further population decline. Various aspects of the ecology of mountain quail have been studied in California, but no in-depth study has been conducted on the habitat-use patterns, movements, and population characteristics of Idaho mountain quail. Such a study is needed before managers can adequately assess impacts of land-use practices on mountain quail habitat and populations, or identify areas suitable for reintroductions. The study area will include several tributaries within the lower Salmon River and Little Salmon River drainages in Idaho. The objectives of this study are: to document daily and seasonal movements and home ranges of mountain quail, to collect information on productivity and survival rates, to document habitat-use patterns, to determine physical and vegetal characteristics of nesting and brood-rearing habitats, and to develop recommendations designed to maintain or enhance mountain quail habitat and populations. Field seasons will be January-August 1992 and 1993. To collect information to meet the objectives, we will trap mountain quail in January and February. Trapped quail will be banded and measured, and radios will be placed on 40 females. We will track radio-tagged quail to determine movements and the physical and vegetal characteristics of nest and brood-rearing sites.

A RESTRAINING DEVICE FOR HANDLING NORTHERN BOBWHITE

ALAN D. PEOPLES, Oklahoma Department of Wildlife Conservation, Oklahoma City, OK 73152

STEPHEN J. DEMASO, Oklahoma Department of Wildlife Conservation, Oklahoma City, OK 73152

Abstract: This paper describes a method for restraining northern bobwhite, allowing an individual to collect data that traditionally required 2 people. The device could be used to age, band, collect blood, measure phenotypic traits, and attach radio-transmitters. The restraining device is constructed with 1.9-cm (3/4-inch) pine. The top and bottom dimensions are 30.5 x 12.7 cm (12 x 5 inches). The 2 end dimensions are 12.7 x 12.7 cm (5 x 5 inches). A hole 3.8 cm (1.5 inches) in diameter is cut in the top of the holder. The bird is placed on top of the device with its legs inserted through the hole. A spring-operated clothes pin is attached dorsal to the knee-joint of each leg. One technician has marked >500 bobwhite using the restraining device without incidence of escape or injury. The bird is immobilized when its legs are suspended in the air, preventing it from pushing-off a solid surface to begin flight. This device may be applicable to other species following appropriate modification. Advantages of the device over previous methods may include use and data collection by 1 person, reduced cost of research, reduced handling time and stress to the bird, and the device can be transported and used easily in the field.

EFFECTS OF INDIVIDUAL HOUSING ON BEHAVIOR, GENERAL HEALTH, AND FOOD AND WATER CONSUMPTION IN MALE NORTHERN BOBWHITE

L. L. CARLOCK, The Institute of Wildlife and Environmental Toxicology, Clemson University, Clemson, SC 29634-0919

K. E. BRYANT, The Institute of Wildlife and Environmental Toxicology, Clemson University, Clemson, SC 29634-0919

M. J. HOOPER, The Institute of Wildlife and Environmental Toxicology, Clemson University, Clemson, SC 29634-0919

Abstract: Most studies with pen-raised northern bobwhite, house >1 bird per cage. Data are usually based on group means with little data on individuals. Male bobwhite were removed from group cages, placed in individual stainless steel cages, and monitored closely for 30 days. Birds could observe neighbors, but physical contact and competition for food and water were eliminated. Body weights and blood cholinesterases (ChE) were monitored at weekly intervals. Food and water consumption, appearance, and behavior were monitored daily throughout the study. Individual norms were established from each bird for food and water consumption; it took 3–7 days to reach “normal” food consumption. Daily fluctuations in amount of food consumed were mirrored in water consumption. All birds gained weight during the study. Plasma ChE activity also increased throughout the study. Condition of the feathers and thus appearance of the birds improved throughout the study. Behavior was constant for each bird but differed considerably between birds.

HOME RANGE SIZE AND HABITAT USE OF REINTRODUCED MASKED BOBWHITE

KAREN M. SIMMS,¹ U.S. Fish and Wildlife Service, Arizona Cooperative Fish and Wildlife Research Unit, Tucson, AZ 85721

NORMAN S. SMITH, U.S. Fish and Wildlife Service, Arizona Cooperative Fish and Wildlife Research Unit, Tucson, AZ 85721

MELONIE L. ATKINSON, U.S. Fish and Wildlife Service, Arizona Cooperative Fish and Wildlife Research Unit, Tucson, AZ 85721

Abstract: We studied home range and habitat use of reintroduced masked bobwhite (*Colinus virginianus ridgewayi*) during 1986–88 on the Buenos Aires National Wildlife Refuge (NWR) in southern Arizona. Home ranges averaged 10.9 ha (5.2–14.6 ha), and core areas averaged 1.1 ha (0.2–2.7 ha). Aerial and basal grass cover and vertical vegetative cover from 0–1 dm were higher in core areas than in noncore areas. Bare ground, litter, half-shrub density and cover, and vertical vegetative cover from 5 to 20 dm were less in core areas than in noncore

areas. Key habitat components for masked bobwhite on the Buenos Aires NWR were interspersed of grass, grass-forb, and shrub vegetation types; diversity of grasses and forbs (10 or more species of each); 150 trees or shrubs/ha in the 0–5 m height class; 90% vertical cover by vegetation from 0 to 1 dm, 50% aerial, 30% basal grass cover, 15% forb cover, and 10% tree/shrub cover.

¹Present address: USDI Bureau of Land Management, Tucson Resource Area Office, 675 North Freeman Road, Tucson, AZ 85748.

SEED AND INVERTEBRATE BIOMASS IN CENTRAL MISSOURI FOOD PLOTS

THOMAS V. DAILEY, Missouri Department of Conservation, 1110 South College Avenue, Columbia, MO 65201

ELENA M. SEON, Missouri Department of Conservation, 1110 South College Avenue, Columbia, MO 65201

Abstract: We measured biomass of seeds and invertebrates potentially available to northern bobwhite (*Colinus virginianus*) under 3 cultivation treatments in a Missouri forest-soil environment. Cultivation treatments included (1) sorghum, soybean, and German millet mixture; (2) sorghum and soybean mixture; and (3) single spring disking. We found no differences ($P > 0.05$) in biomass of seeds and invertebrates among these treatments. Invertebrate biomass from ground and aerial samples increased substantially from June to August. Biomass of seeds captured in seed traps decreased 96% from early October to mid-December. Sorghum and pigweed (*Amaranthus* spp.) seeds dominated above-ground samples collected in January; these and other seeds considered to be acceptable quail food made up 75% of the biomass and thus would be the main sustenance for quail when deep snow covers the ground. Of the 3 cultivated plants, only sorghum was available in amounts adequate to sustain quail through periods of deep snow coverage. Native plants, especially pigweed, accounted for 49% of select quail food found in above-ground samples.

We estimated the amount of emergency food-energy available to quail using published metabolizable energy values. We estimated energy needs of a covey of 10 bobwhite from Burger (unpubl. data); we assumed free-living quail need 50% more energy than Burger's fasted, resting quail. If bobwhite were the only source of seed loss or consumption, food-energy in a 0.1-ha milo/soybean/millet food plot would sustain a covey for 36 days at 0°C and 25 days at -15°C

